What is claimed is:

1. A shift control apparatus for an automated twin clutch transmission including a first input shaft on which a drive-side gear for attaining a first forward gear ratio and a drive-side gear for attaining a third forward gear ratio are supported, a first engine clutch operable to establish a releasable drive connection between an engine and the first input shaft, a second input shaft on which a drive-side gear for attaining a second forward gear ratio and a drive-side gear for attaining a fourth forward gear ratio are supported, a second engine clutch operable to establish a releasable drive connection between the engine and the second input shaft, an output shaft on which driven-side gears meshed with the respective drive-side gears are supported, and a plurality of shift clutches operable to establish releasable drive connections between the drive-side gears and the first and second input shafts and between the driven-side gears and the output shaft, the shift control apparatus comprising:

a shift controller operable to control engagement and release of the first and second engine clutches and the shift clutches thereby attaining a desired gear ratio;

a shift instructing device operable to instruct a gearshift when operated by a vehicle driver so as to move a predetermined amount from a neutral position;

a shift instruction outputting device operable to output a shift instruction when the shift instructing device is caused to move the predetermined amount from the neutral position; and

a shifting movement detecting device operable to detect shifting movement of the shift instructing device before the shift instruction is outputted by the shift instruction outputting device and output a shift starting instruction representative thereof;

the shift controller being configured to perform, in response to the shift starting instruction from the shifting movement detecting device, a pre-shift control by releasing one of the first and second engine clutches from a power transmission route of a pre-shift gear ratio and engaging one of the shift clutches corresponding to a post-shift gear ratio, and perform, in response to the shift instruction form the shift instruction outputting device, a gearshift by releasing the other of the first and second engine clutches from the power transmission route of the pre-shift gear ratio and engaging said one of the first and second engine clutches.

2. A shift control apparatus according to claim 1, further comprising a timer that starts counting in response to the shift starting instruction from the shifting movement detecting device, the shift controller being configured to, after the pre-shift control is executed, release said one of the shift clutches and engage said one of the first and second engine clutches having been released by the pre-shift control when a timer value counted by the timer becomes equal to or larger than a predetermined time.

3. A shift control apparatus according to claim 1, wherein the shift instructing device comprises a pivotal shift lever, and the shifting movement

detecting device comprises a shift start switch that is brought into contact with the shift lever when the shift lever is in the neutral position and brought out of contact from the shift lever to output the shift starting instruction when the shift lever is moved out of the neutral position.

4. A shift control apparatus according to claim 1, wherein the shift instructing device comprises a shift lever, and the shifting movement detecting device comprises a potentiometer that detects a position of the shift lever.

5. A shift control apparatus according to claim 1, wherein the shift instructing device comprises a shift lever, and the shifting movement detecting device comprises a stroke sensor that detects a position of the shift lever.

6. A shift control apparatus according to claim 1, wherein the shift instructing device comprises a shift lever, and the shifting movement detecting device comprises a hole element sensor that detects a position of the shift lever.

7. A shift control apparatus according to claim 1, wherein the shift instructing device comprises a shift paddle installed on a steering wheel, and the shifting movement detecting device comprises a shift start switch that detects start of movement of the shift paddle out of a neutral position thereof.

8. A shift control apparatus according to claim 1, wherein the shift instructing device comprises a pivotal shift lever, and the shift instruction outputting device comprises a shift switch that is brought into contact with the shift lever to output the shift instruction when the shift lever is caused to move the predetermined amount from the neutral position.

9. A shift control apparatus according to claim 1, wherein the shift instructing device comprises a shift paddle installed on a steering wheel, and the shift instruction outputting device comprises a shift switch that is brought into contact with the shift paddle to output the shift instruction when the shift paddle is caused to move the predetermined amount from the neutral position.

10. An automated twin clutch transmission comprising:

an output shaft;

first and second input shafts;

a first engine clutch operable to establish a releasable drive connection between an engine and the first input shaft;

a second engine clutch operable to establish a releasable drive connection between the engine and the second input shaft;

a plurality of drive-side gears supported by the first and second input shafts;

a plurality of driven-side gears supported by the output shaft;

a plurality of shift clutches operable to engage the drive-side gears with the first and second input shafts and the driven-side gears with the output shaft, selectively;

a shift controller operable to control engagement and release of the first and second engine clutches and the shift clutches thereby attaining a desired gear ratio;

a shift instructing device operable to instruct a gear shift when operated by a vehicle driver so as to move a predetermined amount from a neutral position;

a shift instruction outputting device that outputs a shift instruction when the shift instructing device is caused to move the predetermined amount from the neutral position; and

a shifting movement detecting device operable to detect start of shifting movement of the shift instructing device from the neutral position and output a shift starting instruction when the shift instructing device starts moving from the neutral position;

the shift controller being configured to perform, in response to the shift starting instruction from the shifting movement detecting device, a pre-shift control by releasing one of the first and second engine clutches from a power transmission route of a pre-shift gear ratio and engaging one of the shift clutches corresponding to a post-shift gear ratio, and perform, in response to the shift instruction form the shift instruction outputting device, a gearshift by releasing the other of the first and second engine clutches from the power transmission route of the pre-

shift gear ratio and engaging said one of the first and second engine clutches.

11. An automated twin clutch transmission according to claim 10, further comprising a timer that starts counting in response to the shift starting instruction from the shifting movement detecting device, the shift controller being configured to, after the pre-shift control is executed, release said one of the shift clutches and engage said one of the first and second engine clutches having been released by the pre-shift control when a timer value counted by the timer becomes equal to or larger than a predetermined time.

12. An automated twin clutch transmission according to claim 10, wherein the shift instructing device comprises a pivotal shift lever, and the shifting movement detecting device comprises a shift start switch that is brought into contact with the shift lever when the shift lever is in the neutral position and brought out of contact from the shift lever to output the shift starting instruction when the shift lever is moved out of the neutral position.

13. An automated twin clutch transmission according to claim 10, wherein the shift instructing device comprises a shift lever, and the shifting movement detecting device comprises a potentiometer that detects a position of the shift lever.

14. An automated twin clutch transmission according to claim 10, wherein the shift instructing device comprises a shift lever, and the shifting movement

detecting device comprises a stroke sensor that detects a position of the shift lever.

15. An automated twin clutch transmission according to claim 10, wherein the shift instructing device comprises a shift lever, and the shifting movement detecting device comprises a hole element sensor that detects a position of the shift lever.

16. An automated twin clutch transmission according to claim 10, wherein the shift instructing device comprises a shift paddle installed on a steering wheel, and the shifting movement detecting device comprises a shift start switch that detects start of movement of the shift paddle out of a neutral position thereof.

17. An automated twin clutch transmission according to claim 10, wherein the shift instructing device comprises a pivotal shift lever, and the shift instruction outputting device comprises a shift switch that is brought into contact with the shift lever to output the shift instruction when the shift lever is caused to move the predetermined amount from the neutral position.

18. An automated twin clutch transmission according to claim 10, wherein the shift instructing device comprises a shift paddle installed on a steering wheel, and the shift instruction outputting device comprises a shift switch that is brought into contact with the shift paddle to output the shift instruction when the shift paddle is caused to move the predetermined amount from the neutral position.

19. A shift control method for an automated twin clutch transmission including a first input shaft on which a drive-side gear for attaining a first forward gear ratio and a drive-side gear for attaining a third forward gear ratio are supported, a first engine clutch operable to establish a releasable drive connection between an engine and the first input shaft, a second input shaft on which a drive-side gear for attaining a second forward gear ratio and a drive-side gear for attaining a fourth forward gear ratio are supported, a second engine clutch operable to establish a releasable drive connection between the engine and the second input shaft, an output shaft on which driven-side gears meshed with the respective drive-side gears are supported, a plurality of shift clutches operable to establish releasable drive connections between the drive-side gears and the first and second input shafts and between the driven-side gears and the output shaft, a shift controller operable to control engagement and release of the first and second engine clutches and the shift clutches thereby attaining a desired gear ratio, a shift instructing device operable to instruct a gearshift when operated by a vehicle driver so as to move a predetermined amount from a neutral position, and a shift instruction outputting device operable to output a shift instruction when the shift instructing device is caused to move the predetermined amount from the neutral position, the shift control method comprises:

detecting shifting movement of the shift instructing device before the shift instruction is outputted by the shift instruction outputting device

and outputting a shift starting instruction representative thereof;

performing, in response to the shift starting instruction, a pre-shift control by releasing one of the first and second engine clutches from a power transmission route of a pre-shift gear ratio and engaging one of the shift clutches corresponding to a post-shift gear ratio; and

performing, in response to the shift instruction form the shift instruction outputting device, a gearshift by releasing the other of the first and second engine clutches from the power transmission route of the pre-shift gear ratio and engaging said one of the first and second engine clutches.

20. A shift control method according to claim 19, wherein the automated twin clutch transmission further includes a timer that starts counting in response to the shift starting instruction from, the shift control method further comprising, after the pre-shift control is executed, releasing said one of the shift clutches and engaging said one of the first and second engine clutches having been released by the pre-shift control when a timer value counted by the timer becomes equal to or larger than a predetermined time.